

Claims

[c1] What is claimed is:

A method for determining a minimum amount of post production testing required on an integrated circuit device to achieve optimum reliability of said integrated circuit device, said method comprising:

detecting defective cells or active elements containing

defective cells within said integrated circuit device;

determining a number of said defective cells or active elements containing defective cells; and

determining a minimum amount of post production testing required on said integrated circuit device to achieve optimum reliability of said integrated circuit device based upon said number of defective cells or active elements containing defective cells (DEFECTS).

[c2] The method of claim 1 wherein post production testing is stress testing.

[c3] The method of claim 1 wherein active elements are memory modules.

[c4] The method of claim 1 wherein said integrated circuit device comprises one or more activatable redundant ele-

ments, said method further comprising activating redundant elements to replace said defective cells or active elements containing defective cells.

[c5] The method of claim 4 wherein post production testing is stress testing.

[c6] The method of claim 4 wherein active elements are memory modules.

[c7] An apparatus for determining a minimum amount of post production testing required on an integrated circuit device to achieve optimum reliability of said integrated circuit device, said apparatus comprising:
one or more self test circuits within said integrated circuit device for detecting defective cells or active elements containing defective cells;
a counter coupled to each said self test circuit for incrementing a count for each said defective cell or active element containing defective cells; and
a control means coupled to said counter for determining a minimum amount of post production testing required on said integrated circuit device to achieve optimum reliability of said integrated circuit device based upon said count.

[c8] The apparatus of claim 7 wherein post production test-

ing is stress testing.

- [c9] The apparatus of claim 7 wherein active elements are memory modules.
- [c10] The apparatus of claim 7 further comprising one or more activatable redundant elements for replacing said active elements containing defective cells.
- [c11] The apparatus of claim 10 wherein post production stress testing is stress testing.
- [c12] The apparatus of claim 10 wherein active elements are memory modules.
- [c13] The apparatus of claim 7 further comprising:
 - each said counter coupled to a sequential said counter to shift counts from one counter to another;
 - an accumulator coupled to the last said counter and to the first said counter to accumulate a total count for all counters;
 - a control means coupled to said accumulator for determining a minimum amount of post production testing required on said integrated circuit device to achieve optimum reliability of said integrated circuit device based upon said accumulated count.
- [c14] The apparatus of claim 13 wherein post production test-

ing is stress testing.

- [c15] The apparatus of claim 13 wherein active elements are memory modules.
- [c16] A computer program product residing in a storage media for determining a minimum amount of post production testing required on an integrated circuit device to achieve optimum reliability of said integrated circuit device, said computer program product comprising instructions for:
 - intercepting a signal containing information about DEFECTS in said integrated circuit device;
 - analyzing said information to determine a number of said DEFECTS; and
 - determining a minimum amount of post production testing required on said integrated circuit device to achieve optimum reliability of said integrated circuit device based upon said number.
- [c17] The computer program product of claim 16 wherein post production testing is stress testing.
- [c18] The computer program product of claim 16 wherein active elements are memory modules.
- [c19] The computer program product of claim 16 further comprising the instructions of:

analyzing said information to determine the location of DEFECTS;

more accurately determining a minimum amount of post production testing required on said integrated circuit device to achieve optimum reliability of said integrated circuit device using said location.

[c20] The computer program product of claim 19 wherein post production testing is stress testing.

[c21] The computer program product of claim 19 wherein active elements are memory modules.